April 2005

TSUNAIN RELIEF

280,000 Lives Lost

World Responds

Survivors Rebuild

U.S. Agency for International Development

"The loss of life and property is immense. People and nations throughout Asia and around the world are working to ease the suffering brought on by this terrible disaster. The international community has responded with generosity and compassion."

President George W. Bush January 10, 2005, at USAID Washington Headquarters

"In tsunami relief...not only did the United States Government respond, but the American people responded, and they responded in great numbers.

That is the basis of our foreign policy."

Secretary of State Condoleezza Rice January 31, 2005, at State Department Town Hall Meeting



The Great Indian Ocean

Tsunami: An undersea earthquake off Sumatra, Indonesia Dec. 26 spawned huge tsunamis that hit many countries killing hundreds of thousands of people. 4

The World Responds: Within hours, aid agencies and militaries of the United States and other countries rushed to help survivors, pledging more than \$6 billion in aid. 8



COVER PHOTO: A young Indonesian girl near the town of Glebruk on Indonesia's Sumatra Island, where most of the tsunami deaths occurred. PHOTOS: ELIZABETH A. EDWARDS / U.S. NAVY; INSET JOHN D. YODER / U.S. NAVY

The Tsunami's Path

Sri Lanka Disaster: Most of the island nation's coastline was inundated by tsunami waves, killing 31,000 Sri Lankans and foreign tourists. . . . 16



Thailand Resort Region Hit:

The tsunami battered hotels on Phuket and nearby coastal areas, forcing tourists, hotel workers, fishermen and others to fight for their lives and help each other to safety. 19

India, Maldives: The tsunami took a toll in India—which mobilized its military and disaster teams to help survivors—and

in the Maldives, whose low-lying islands were flooded but spared the destruction of giant waves which rolled on to Somalia. **20**

Healing and Rebuilding

Psychological Trauma:

Tsunami Warning System:

Reconstruction Begins: Affected countries plan to resettle one million survivors as work begins to repair damaged schools, hospitals, power and roads. . . . 24





The Great Indian Ocean Tsunami

The tsunami came ashore as a giant wall of water, 35 feet high and black with sand scooped from the ocean floor, destroying thousands of homes and shops, leaving hundreds of thousands dead or missing.

AM local time on the day after Christmas, December 26, 2004, the largest earthquake to hit the world in 40 years struck, 10 miles under the sea bed just off the western tip of Indonesia's Sumatra island.

The earthquake knocked down buildings but the real toll—273,000 people dead or missing—came when the quake set off undersea waves that sped across the Indian Ocean at 600 km per hour (375 mph), rising up in killer tsunamis or tidal waves.

The suffering and loss are beyond description. Thousands of children lost their parents. Parents lost children and spouses.

Yet amid the most devastating natural disaster to hit the world in decades, there were rays of hope. The world reacted with speed and compassion. U.S. warships sailed full speed to deliver aid—clean water, medicine, tents and food. Dozens of countries led by a massive U.S. aid operation—focused on the displaced, the wounded.

from disease, lack of clean water or hunger than died in the tsunami—there were no outbreaks of illness. Hundreds of non-government organizations, the ministries of health and welfare, militaries of many nations banded together to assist those in need. Some \$6 billion in humanitarian aid was pledged by countries and private citizens. The United States gave the largest pledge of \$950 million, followed by Germany.

But for hundreds of thousands, it was too late. The disaster came swiftly—in a few devastating minutes—without warning.

In Banda Aceh, just a hundred miles or so from the epicenter of the magnitude 9 undersea earthquake, a huge department store tumbled into a jagged pile of ruins. Government buildings pancaked. Walls cracked and windows broke. But it was

nothing compared to what followed.

As the earthquake pushed a piece of the ocean floor the length of California upwards several feet, the sudden movement unleashed waves of energy that sped through the ocean at 500 miles per hour—the Japanese called them tsunamis and in English "FIFTEEN MINUTES AFTER the earththey're known as tidal waves.

IN MINUTES, they hit their first obstacle—the west coast of Sumatra in Aceh province, a rural, rice-growing region ridged with towering, jungle-clad peaks and inhabited by 4 million mainly Muslim people.

At Calang and Meluaboh and dozens of smaller towns and villages, barely awake people were swept to their deaths by a wave that towered 60 to 80 feet tall, driving inland up to three kilometers. It would be days before any survivors could be reached by rescuers to

Despite warnings that more would die sands killed on Sumatra's sparsely populated south west tip were only a prelude.

The medium-sized city of Banda Aceh lay stunned that morning after the quake, unaware of the violent surge of water rushing towards it under the ocean. Boats at sea would scarcely notice the tsunami which raised the sea only about 25 centimeters (10 inches) in deep water, moving at hundreds of miles per hour as a wave of energy.

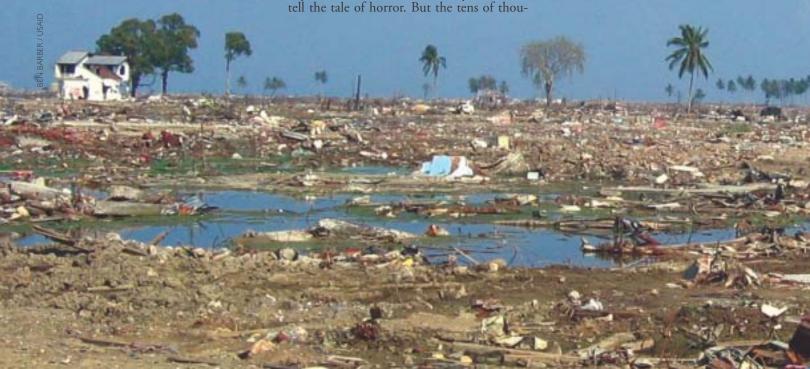
As it bore down on the sleepy city of 300,000 people, and reached the shallow water near its harbor and densely packed downtown, the lower edge of the tsunami slowed as it rubbed along the ocean floor. The upper edge rose up, sucking the ocean back from the shore leaving the ocean floor exposed with thousands of stranded fish flopping on the mud. Unaware that this is the sign of an impending tsunami, people watched or ran to catch the fish.

Then the ocean returned, rushing forward at perhaps 50 miles per hour as a tow-ering black wall of water mixed with mud from the ocean floor.

quake I saw the water coming and I ran," said Zainal Abidin, 49, who sold fish in the port.

"The water was 12 meters high (36 feet). I ran with the water a few meters behind me and jumped into a dump truck to escape. People were being sucked into the water and asking for help. I heard the noise of the houses sucked under the water. Half a minute later I couldn't see them. The water was so strong it came out of the drains. There was no question of swimming.'

Abidin's wife and two daughters aged 21 and 9 were killed—"we never found them,"



he said as he looked out over the flat cement platform that is all that remains of his home. "This is the grave of my family."

It is littered with smashed brick walls, twisted sheets of tin roofing and bits of colorful cloth caught on branches. There is a curtain, still on its rod, a yogurt cup, a child's pink school bag.

A neighbor rides up on a bicycle, sees Abidin and they embrace. Both are weeping.

Behind them, the trunk of a coconut tree shows the stain left by the sea water, about 20 feet above the ruined city floor.

Anyone who has tried to lift a couple of pails of water knows that water is heavy. When this wall of water, now moving about 80 km per hour (50 mph), hit the first ships and port structures, it hurled them off their moorings and foundations, smashing them against each other and tearing them to bits.

The tidal wave moved inland, somehow sparing hundreds of palm trees as the water passed around the thin trunks, ripping off every frond. It smashed thousands of houses into rubble, turning furniture, brick walls and wooden siding into dangerous weapons. Thousands of people never had a chance. Engulfed suddenly in the wall of water, they were smashed by the debris or drowned, wrapped in junk and clutter that was once their homes.

A 200-foot long barge with a huge electric generator was carried inland five kilometers by the 30 foot wall of water, settling on top of the remains of houses. From that boat back to the sea one walks along a scene of Biblical destruction, littered with the hopes

PHOTOGRAPHING HISTORY: An Indonesian visitor takes a photo of the devastated center of Banda Aceh, Indonesia, where 200,000 people died or were lost to the tsunami December 26. The sea lies just beyond the most distant trees.

and dreams and bodies of the ancient city of Banda Aceh.

Perhaps 200,000 people died there in a few minutes before the water, its energy exhausted, flowed back into the Indian Ocean, carrying with it tons of debris and thousands of bodies that have never been found.

One month after the tsunami, Indonesian troops and relief workers were finding 1,000 bodies per day as mechanical excavators removed the shattered piles of debris and found the dead beneath.

At least, the smell of death had gone. But the fear remained as survivors mourned their lost children and parents and recalled the moments of terror as they fought to survive.

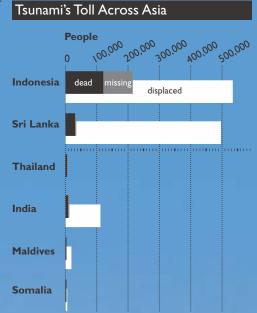
LESS THAN AN HOUR LATER At sea, the wave bore on, hitting next the resort towns of Thailand's Andaman Sea coastline—Phuket Island and the nearby beach resort of Khao Lak. About half the 5,000 dead and 2,000 still missing in Thailand were foreign tourists.

TWO HOURS AFTER the earthquake, Sri Lanka was next—3 meter (15 foot) waves lashed the coastline, killing 30,000 people and leaving another 10,000 missing. It was called the worst natural disaster in the island nation's history.

Once again, children and fishing folk living near the sea wondered as the sea withdrew 400 meters (400 yards) from the shore, exposing the sea bed and flopping fish. Some raced down to look or collect the fish, only to be washed away as the sea returned.

Abdul Kafoor, 36, is a fisherman in the east coast town of Kalmunaikudy in Ampara Province where more than 100,000 people have lost their homes.

"I lost my wife and three children in the waves," said the fisherman. "Of 16,000 people in our town, 2,500 died. I survived be-



Source: United Nations and governments of Indonesia, Sri Lanka, India.

cause I went to the road to get tea. I ran to save my children but couldn't."

His two surviving children Farmil, 9 and Fazna, 8 cling to his sarong as he asks a visitor, now that his wife is dead, "How can I work and bring up two children?"

Relentlessly, the tsunamis continued their terrible route across the Indian Ocean, killing 10,000 on India's southeastern Tamil Nadu Province coastline, scores in Burma and Malaysia, hundreds in the Maldives, and reaching thousands of miles across the sea to Somalia on Africa's coast to kill 200 more.

This report tells the story of the tsunamis and how people have worked together to help the survivors rebuild their health, homes and families in the wake of this greatest natural disaster in their lifetimes.



least

0

0

greatest

1000 Miles

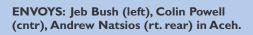
15°S

1000 Km

NAN DEARBORN / USAID









RELIEF CARRIER: USS Abraham Lincoln and U.S. hospital ship Mercy off Aceh.



BUSH AND CLINTON: Ex-presidents visit tsunami survivors and raise aid funds.

Rushing to Help

The World Responds

Within hours of the tsunami, civilian and military relief missions from the U.S. and many other countries began moving food, water, tents, medicine and relief workers to assist the survivors.

he Dec. 26 earthquake and tsunami cut communications and isolated many communities, but reports of the disasters spread like wildfire around the world.

Early reports told of a few dozen dead. Then it was a few hundred, a few thousand. Days later it reached tens of thousands. More than two weeks later the reports spoke of more than 100,000 deaths—a figure that would be dwarfed by the final estimates of about 273,000 dead and missing—about a third of them people who simply vanished without a trace and are unofficially presumed to have died.

Some news articles focused on individual cases in which aid was slow in reaching some of the one million people displaced by the tsunamis. Others reported some donated clothing or food was poorly distributed or even soaked in the seas on remote beaches.

But most relief reached the needy as they set up shelters in tents or in hundreds of schools, temples, mosques, churches or with families unaffected by the disaster.

Food, clean water, medical care and other help was rushed by plane, helicopter, ship and trucks.

The survivors had been badly shaken. They had lost homes and families, and they had ongoing fears of the sea in case of another earthquake. But they were healthy and helping each other to get over their horrible experience and prepare to restart their lives.

They had clean water. They cooked on small kerosene stoves or cooking fires. They had clean, donated clothing to replace their own, lost when their homes were smashed by the waves.

Some relief groups issued dire predictions that as many people would die from disease and foul drinking water as from the tsunamis themselves. But they were proved wrong.

There was no outbreak of disease or loss of life due to epidemics. This is mainly because donor nations and aid groups quickly joined hands with disaster relief officials in the affected nations to dispatch immediate relief, organize teams to assess the need and prepare for one of the world's largest humanitarian relief operations in history.

WITHIN HOURS of the tsunami, in Washington, while the head of the U.S. government's principal overseas humanitarian agency—the U.S. Agency for International Development or USAID—was still in church, an emergency Response Management Team (RMT) was formed by his staff to coordinate aid.

USAID missions in Indonesia, Sri Lanka, Thailand and India immediately released \$100,000 to each country for their Red Cross or other local humanitarian groups.

The U.S. State Department set up a core group of nations, along with Australia, Japan and India, to coordinate aid. State also prepared lists of missing American citizens to help their relatives determine their fate.

U.S. military forces received permission from the Thai government to set up Joint Task Force 536 at a Thai air base in Utapao, under Marine Lt. Gen. "Rusty" Blackman.

U.S. military officers there met with civilian relief specialists from USAID's Office of U.S. Foreign Disaster Assistance. Military officers said they had helicopters and planes and ships ready to swing into operation. USAID officials said they had relief supplies, and experts who could determine needs and appropriate amounts and kinds of aid.

The military agreed to ferry the Agency's

relief supplies into Banda Aceh, which was soon clear of water, and into Colombo, Sri Lanka. U.S. military ships in Guam, Singapore and Diego Garcia took on fuel, tents, food, medicines and tools. Some put to sea anticipating orders to head for the region.

Cell phones were not working properly but still relayed text messages which informed USAID staff—many of them off duty for the Christmas holiday—of the huge earthquake and tsunamis, said Jon Lindborg, deputy mission director in Jakarta.

Although Aceh province had been off limits to most aid workers for 30 months as the government fought a separatist movement, USAID did have an assistance program there with the International Organization for Migration—an aid group. IOM was authorized to hire 80 large trucks which were loaded with food, water, electric generators and barrels of gasoline and driven from Medan 24 hours north over damaged roads to deliver the first relief to Aceh.

Additional aid from the U.S. and other

USAID RESPONDS TO A CRISIS

- I. Crisis or disaster hits:
- Agency or U.S. Embassy issues a Declaration of Disaster
- USAID sends a Disaster Assistance Response Team (DART)
- Needs Assessments: DART experts assess emergency requirements and begin to supply food, health care, sanitation, shelter and water. I-30 days
- Relief and Rehabilitation: Restoration of basic services to pre-crisis level.
 days-2 years
- 4. **Reconstruction:** Large projects such as roads, hospitals and power. I—5 years
- 5. **Long-Term Development:** Education, rule of law, governance, trade, economic growth, health and agriculture. 5–10 years



CUSHIONED AID: Landing relief from the USS Bonhomme Richard on Sumatra.

DISGORGING AID: Huge planes deliver relief for tsunami survivors.

governments, and from private relief groups, soon arrived in India, Thailand, the Maldives and Somalia.

TUESDAY, two days after the tsunamis struck, Indonesian Vice-President Muhammad Jusuf Kalla met with 200 ambassadors, donor agencies and Non-Government Organizations (NGOs).

"They showed us staggering pictures taken when the president [Susilo Bambang Yudhoyono] flew from Papua to Banda Aceh Monday—the vice president said he'd seen enough—it looked like he had seen a ghost," said Lindborg.

Although Aceh had been off limits due to the separatist insurgency, it was thrown open to all donors to deal with the crisis. Said one foreign aid official: "In two days, Aceh went from feeling like North Korea to Woodstock" as hundreds of aid groups from around the world rushed in.

Save the Children, International Medical Corps, CARE, Doctors Without Borders, World Vision, Catholic Relief Services, Oxfam, the International Rescue Committee and hundreds more set up operations. They ranged from huge teams of foreign and local staff equipped with fleets of trucks and even helicopters to small church-run groups with few resources.

Australia's military rushed its ships and planes to help. By Wednesday, President Bush approved U.S. military help.

BY FRIDAY, the U.S. aircraft carrier group Abraham Lincoln was off the Aceh coast. Helicopters from the Lincoln began carrying food and water to tsunami survivors on the badly hit western side of Aceh, where roads and bridges had been destroyed cutting off all land communication with the relief effort building up in Banda Aceh.

USĂID officer Herbie Smith in Jakarta learned that the Lincoln could produce tens of thousands of gallons of clean water, but lacked containers to deliver it. So Smith bought up on the Jakarta market thousands

of plastic five-gallon containers and shipped them to the Lincoln.

BY THE END OF THE WEEK, the United States, Japan, Britain, Germany, Singapore, Australia, Germany, Switzerland and a dozen other countries had civilian, military and private relief teams on the ground in Indonesia, Sri Lanka and Thailand. India did not request foreign help and said it would provide its own disaster response. It even sent help to its neighbor Sri Lanka. Thailand accepted foreign help for a time but it was able to care for survivors.

BY JANUARY 26, 2005, one month after the tsunamis, the International Federation of Red Cross and Red Crescent Societies announced that the \$1.2 billion pledged worldwide was sufficient to its relief program.

BY MARCH, governments pledged more than \$6 billion in relief and reconstruction funds. Americans privately donated another

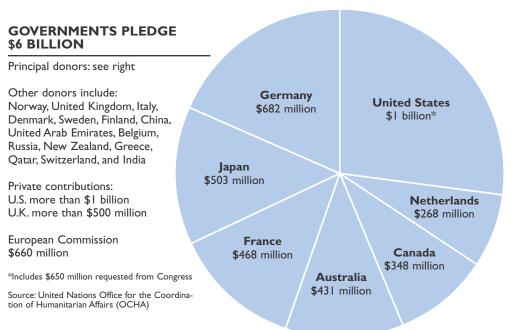
\$1 billion to relief agencies, and British citizens have contributed \$575 million.

Catholic Relief Services stopped taking donations after it received \$114 million, Doctors Without Borders started sending money back and Oxfam said it no longer needed contributions.

Jan Egeland, emergency relief coordinator for the United Nations, said 90 percent of the \$977 million the United Nations initially sought for emergency relief had been received and mostly spent providing food, shelter and medical help for survivors.

The big question mark for the future was would governments and development groups be able to come up with the estimated \$12 billion in reconstruction costs.

For the large construction projects—such as the \$200 million repair of the road and bridges on the West Coast of Aceh, the accounting firm PricewaterhouseCoopers offered to the United Nations to audit the work pro bono.







With about 235,000 dead or missing, Indonesia's Aceh province suffered the greatest loss in the Indian Ocean.

he small yellow helicopter that lifted up from Banda Aceh airport flew over the vast brown swathes of fields, villages, forests and shoreline smashed by the December 26 tsunami. It passed over the road, its bridges tossed aside like toys, cut in many places and washed into the sea in others.

Huge boats lay upside down and acres of farmland lay washed clean of crops, houses,

trees and all signs of greenery.

Wherever it passed a village spared by the tsunami, blue tents clustered around the domed mosque and the school yard.

But it was only when it landed and one set out on foot through the muddy debris left by thousands of homes that the enormous destruction took on a human face.

The town of Calang on the west coast of Sumatra was perhaps the first place the tsunami hit—probably just five or 10 minutes after the 6:58 a.m. earthquake.

Yet one month later, Lele Nurlali, 15 and Mohammed Haris, 9—who live in an emergency shelter with their aunt because their parents died in the tsunami—are going to school. Hundreds of others live in the sturdy shelters the survivors built up on the hillside above the threatening sea, with plastic tarps provided by USAID and other foreign donors. They used salvaged boards for the floor and tin sheets for the roof.

BANDA ACEH DESTROYED: A U.S. Navy helicopter crewman delivering relief views the utter destruction of Banda Aceh.



ADOPTING ORPHAN: This woman in a displaced persons camp has informally added the orphan boy next to her, to her own family.

Inside the shelters, children play and read their school books. The floors are clean and clothing—provided by donors—is clean and folded neatly on shelves supported by straight branches.

Inside Lele's house, stacked on a shelf, are bottled water, biscuits, Lux soap, shampoo and bags of rice.

"The first help we got came from the U.S. Navy helicopters," said teacher Yusni (she uses one name) who lives with nine others in one of the shelters. Her husband is dead and her village destroyed.

In large brown tents set up by the Indonesian military, a high school has been started. "We feel sad because we miss our friends—10 kids in my class died," said one of the students.

In Calang and in Banda Aceh, survivors support each other and provide the love and care that helps them cope with their loss.

Many earn \$8 per day shoveling mud and debris from hospitals, schools, roads and public buildings under U.S. programs.

Aceh is a fertile province and away from the damaged coast, golden rice fields were being harvested. Fishermen were hoping to repair their boats and resume their trade.

The Free Aceh Movement, known by Indonesian letters GAM, has fought the Indonesian army since 1976, leaving 13,000 dead. But after the tsunami, fighting stopped and peace talks began in Helsinki.

At Banda Aceh airport, the humanitarian aid operation was going on full bore one month after the tsunami. Four huge cargo

planes parked in a row, disgorging pallets of food, water and medicine; trucks and construction equipment rolled down ramps ready to deliver aid and repair roads.

Out on Banda Aceh's vast, ruined plain, which once housed 200,000 people and their businesses, schools and places of worship, dozens of large excavators dug at the piles of shattered boards, cement and brick rubble, bits of furniture and other trash left by the giant wave.

An endless series of trucks carted the debris away to dump sites.

One truck carried away plastic bags with bodies discovered as the rubble was cleared—up to 1,000 corpses a day were still being found a month after the tsunami.

In the tent camps where 400,000 sur-



vivors were sheltered, hundreds of foreign aid groups provided clean water, food and medical care. USAID funds went to UNICEF, World Vision, the World Health Organization, Mercy Corps, the International Rescue Committee, the moderate Islamic group Muhammadiyah, Project Concern International, CARE and other groups.

U.S. Navy helicopters and planes from the aircraft carrier Abraham Lincoln and the Bonhomme Richard flew 600 sorties delivering 4.8 million pounds of food, water and medicine. They evacuated 3,000 Indonesian tsunami victims to shelters and hospitals.

At Banda Aceh airport each morning, 20 U.S., Indonesian, German, Australian and other military officers met with U.N. officials to coordinate aid. When the Lincoln

ended its mission Feb. 4, the Banda Aceh "Fifteen minutes after newspaper ran a front page photo of the ship headlined: "Thank You USS A. Lincoln." the earthquake I saw

In the corner of the picture was a photo of the U.S. hospital ship Mercy which treated 20,000 tsunami survivors before it left Indonesian waters March 16.

U.S. aid to Indonesia reached \$130 million by April and private American pledges to all tsunami-affected countries topped \$1 billion by mid March according to InterAction, a Washington-based group of more than 160 NGOs.

The Indonesian military and USAID had begun building temporary housing to move people out of tents while Indonesia decided where to build permanent homes that will be safe from future tsunamis.

'Fifteen minutes after the earthquake I saw the water coming and I ran. The water was I2 meters high... People called for help. I heard the noise of the houses sucked under the water."

Zainal Abidin, 49, who sold fish in Banda Aceh







U.S. Government Aid to Indonesia

Aid provided by the U.S. military included:

- Aircraft carrier Lincoln plus other U.S. ships used dozens of helicopters and landing craft to deliver aid.
- About 16,000 U.S. sailors and airmen helped deliver aid and evacuate injured.
- U.S. military hospital ship Mercy treated 20,000 people affected by the tsunami.

Civilian aid worth \$42 million delivered as of April 1, 2005, included:

- 80 heavy trucks hired to deliver aid
- Kitchen sets for 100,000 people
- Mosquito nets for 30,000 people
- ●Water containers for 210,000 people
- Hygiene kits serving 10,000 people
- Plastic shelters for 690 people
- \$2.5 million for cleanup crews



BEARING RELIEF: Pallets of U.S.supplied food, water, medicine and tenting arrive by plane for distribution.



Half Million Homeless

Sri Lanka Disaster

More than half the coastline of the island nation was hit by tsunami waves and flooding, killing foreign tourists as well as local people from all its ethnic and religious groups.

It took two hours for the tsunami to cross hundreds of miles of the Indian Ocean from the epicenter of the earthquake to the beaches of Sri Lanka. But then it played the same devious trick upon tens of thousands of fishermen, villagers, tourists, shopkeepers and others that it did in Indonesia.

others that it did in Indonesia.

First the sea withdrew leaving the ocean floor exposed. Then it returned with a fury. A 15-foot tall wave raced up the beach and smashed houses, hotels, cars and a train.

Amid the wreckage of his home in the village of Kalmunai Kuby, in the Eastern province of Ampara, Abdul Kafoor, 36 recalled how 2,500 people in his village of 16,000 people died that morning.

"My wife and three of our children died," he said, as his two surviving kids clung to his sarong.

Villagers spent the days, one month after the tsunami hit, in tents pitched beside their ruined homes, while the government studied where it would be safe to rebuild.

Those whose original sites are deemed

Those whose original sites are deemed unsafe will need new land, resources and planning for new livelihoods. Until then, the displaced sleep in temporary housing or the homes of friends and relatives. Each day they leave those homes—so as not to burden their hosts—and pass the time next to their former homes.

USAID in mid-March was helping to construct 4,000 transitional shelters to protect

families during the upcoming rainy season and until the government designates land away from the sea for permanent housing.

The tsunami in Sri Lanka killed 31,000, including hundreds of British and other tourists. More than 4,000 more people recommendation and the property of the season and the property in the season and the season are property in the season and the season are season as the season are season and until the government designates and away from the season and until the government designates and away from the season are season as the season are season are season as the season are season are season as the season are season as the season are season are season as the season are season are season as the season are season are season are season are season are season as the season are season are season are seas main missing and are most likely dead.

MARKING THE SPOT: Sri Lankan fishermen spend their days at this tent to mark their destroyed homes in Kalmunaikudy, Ampara Province, but sleep inland with relatives while the government decides where they can rebuild.



U.S. Government Aid to Sri Lanka

U.S. military aid supplied included:

- Marine helicopters lifted relief supplies to coastal villages.
- Military ships supplied fresh water in initial stages of relief.
- Civilian U.S. aid totaling \$62 million as of April 1, 2005 included:
- 7 airlifts valued at \$1.5 million
- Water containers for 75,000 people
- \$25 million in emergency food
- •\$19 million for cash-for-work clean up
- •\$1 million for traumatized children, child protection and anti-trafficking

About 550,000 people had their homes destroyed and live in schools, tents, temples and churches or with host families.

More than 300 NGOs came to this island nation of 15 million people off the southeast coast of India to help after the tsunami. U.S. Marine helicopters ferried relief supplies from Colombo's port over the mountains in the center of the island to the damaged areas of the south, east and north.

By the end of February, U.S. aid to Sri Lanka was close to \$70 million—nearly all in emergency relief.

The cost to reconstruct damaged infrastructure will be over \$1.5 billion, the International Monetary Fund estimated.

One of the biggest economic blows from the tsunami was the loss of about \$3 billion

in tourist revenues throughout the affected region, Visa International estimated.

Sri Lankan Foreign Minister Lakshman Kadirgamar said March 18 "tourists should return to Sri Lanka despite the devastating impact of the December 26 tsunami." In fact many of the hotels on the south coast had been repaired and reopened with tourists slowly returning.

The shock and terror of the tsunami is beginning to fade. Six weeks after it hit, Sri Lankans stroll along the Galle Face promenade by the sea in Colombo. A sun sets tranquilly over the water and children fly kites or chase balls along the sandy shore.

In the villages of Ampara, fishermen slowly are repairing their boats, many with U.S. aid, and returning to the sea.



USAID IN SRI LANKA

USAID ALREADY HAD A TEAM of development workers in place and a mission based in Colombo so it was able to quickly use those assets to deliver fast relief to survivors.

Wayne Brook had already spent two years as a USAID development contractor in Ampara, Sri Lanka—the hardest hit province. "So I immediately shifted to relief," he said.

First USAID gave grants to hospitals for equipment and outreach to treat the injured, shipping the equipment overland from Colombo. Next it provided generators and water pumps to camps for the 150,000 people in displacement camps in his province.

Then tools and equipment from shovels to wheelbarrows were given through local NGOs to help people clear debris and open routes. Next he arranged for volunteers from the mainly ethnic Sinhalese south to come to the east and help do clean up along with the local ethnic Tamils and Muslims in the east.

This was aimed at bridging differences in society caused in part by the lingering 25-year Tamil separatist uprising by the Tamil Tigers.

A senior Sri Lankan minister said that 60 percent of the tsunami damage took place in areas controlled by the Tigers and that a

proportionate amount of foreign aid should go there. However the U.S. Government has listed the Tigers as terrorists—they are blamed for the suicide bombing that killed Indian Prime Minister Rajiv Gandhi, among others—so aid is being provided directly to the needy without building up the Tigers—a delicate task.

Brook, with USAID's Office of Transitional Initiatives, next began cash for work programs, hiring survivors to clean up schools and roads. The Agency also leased heavy equipment such as front end loaders, excavators, tractors and trailers.

The next task was to hire local masons and carpenters to build latrines and water tanks for temporary schools UNICEF was building. USAID also hired multi-ethic teams of welders and carpenters to repair school furniture.

Hundreds of large trawlers, fiberglass outrigger canoes and small motorboats—some built with USAID support—were destroyed in the tsunami. The agency began helping with repairs, new boats, nets, engines, floats and training.

Damaged government offices and schools were given computers, printers, photocopiers, chairs, desks and internet access.

Thailand Resort Region Hit

Hundreds of tourists from Sweden, Finland and elsewhere in Europe were killed or injured along with Thai villagers and hotel staff as the tsunami hit Phuket, Khao Lak and Phi Phi Island.

It was a quiet Sunday morning when Kevan noticed water rushing into the street at Kata Beach on the Southern Thai resort island of Phuket on the Andaman Sea.

The South African scuba instructor rushed down to the beach to take pictures as the sea withdrew hundreds of yards, exposing the coral reef. Next thing he knew, the water was back—up to his neck—and he had to swim for his life.

Some 5,400 people died and another 3,000 are still missing and presumed dead in Thailand after the tsunami hit, an hour or so after it hit Banda Aceh. Many were tourists from Sweden, Finland, Germany and elsewhere vacationing with their families at Khao Lak, about two hours drive north of Phuket.

"It was not clear for a number of days where the center of this disaster was," said Tom Dolan, Bangkok chief of USAID's Office of U.S. Foreign Disaster Assistance.

"Reports started coming first from Phuket, where tourists were hit. We knew Sri Lanka was also serious. But we only learned that most people had died in Banda Aceh later on."



ABOVE: Thais work on fixing their fishing boats that were damaged by the tsunami.

RIGHT: Buddhist monks chant prayers for victims January 5 in Phuket, Thailand at a mourning ceremony in a soccer stadium.

The first reports of the tsunami came from Phuket where injured and distraught European tourists told how the powerful currents separated them from spouses and children who later drowned.

USAID gave \$300,000 to the Thai Red Cross but the Thai government organized relief and did not require much foreign help.

Six weeks after the tsunami, Phuket's principal tourist town of Patong had largely repaired the damage—stores were rebuilding, businesses were operating, tourists were returning and only a few tell-tale patches of rubble remained.

Survivors told harrowing tales of heroism—about Thais and tourists who raced into the surf to rescue others, or piloted boats collecting those swept out to sea by the waves.

The Moken or Sea Gypsies who live on boats in the Andaman Sea coastal islands survived because they interpreted the withdrawal of the water and silence of some insects as a sign that a giant wave was coming.

U.S. Government Aid to Thailand

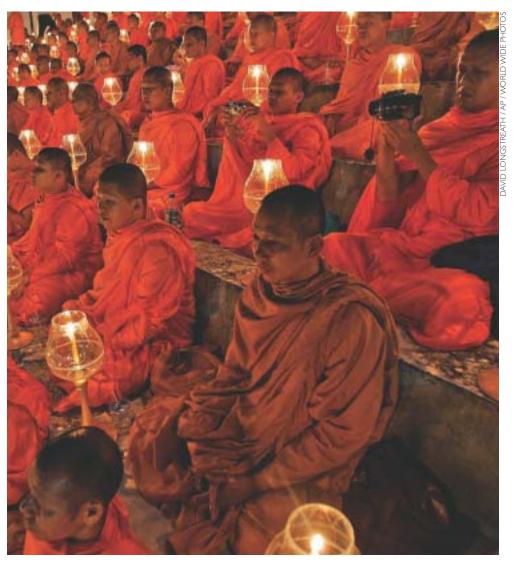
Aid totaling \$1.06 million as of April I, 2005 included:

- One airlift valued at \$700,000
- Water containers for 20,000 people
- Hygiene kits for 33,000 people
- Plastic shelters for 1,700 people
- \$100,000 to the Thai Red Cross
- Restoration of fisheries and fishing infrastructure \$750,000

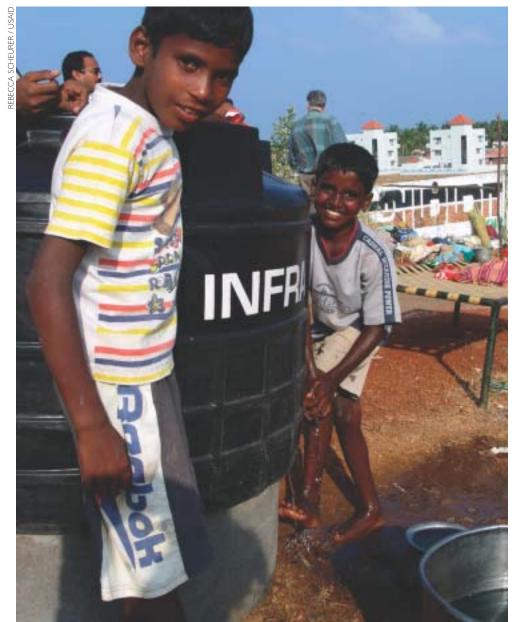
That authorities wanted people to rebuild away from the water's edge and have been searching for new living sites.

U.S. military forensic experts from Hawaii set up a team to help identify the tsunami remains.

As in the other tsunami-affected countries, Thailand's overall economic growth remained little changed by the tsunami's impact and was expected to be around 5 percent.



Vave Lashes India



"We had the capability and the resources to successfully deal with this disaster," said Foreign Secretary Shyam Saran.

It was 2,000 kilometers (1,250 miles) from the earthquake epicenter to the shores of Tamil Nadu State, where waves began hitting two hours after the quake. All along the Bay of Bengal coastline high water caused \$1.6 billion in damage, India's government said, with another \$600 million in damage to the Andaman and Nicobar Islands.

Close to 11,000 died and 5,600 were missing, with another 112,000 displaced by the disaster. The deaths were especially poignant among primitive tribes in Andaman and Nicobar Islands where 2,500 died and nearly all of India's missing had been living.

Some 40,000 people on the islands were still living in relief camps more than two months after the tsunami.

Although still a developing country, giant India—the world's most populous democracy with more than 1 billion people—moved swiftly to provide relief to its own citizens as well as to help Sri Lanka.

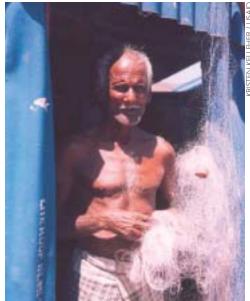
India's National Institute of Disaster Management had planned for disasters generally from floods and cyclones—and

U.S. Government Aid to India

Totalled \$4.1 million as of April 1, 2005 including:

- Latrines for 27,000 people
- ●Water for 82,000 peo-
- •Waste removal at four relief camps
- Eight day care centers
- 1,500 temporary
- 20,000 water tanks





LEFT: Children at an Indian camp for displaced tsunami survivors fetch water from a tank provided by relief workers.

ABOVE: An Indian fisherman in a displaced persons camp repairs his nets while waiting for the chance to return to the sea.

"we had the capability and the resources to successfully deal with this disaster," said Foreign Secretary Shyam Saran.

India also joined the United States, Japan and Australia in the core group of countries coordinating early aid efforts.

The World Bank estimated, in mid-March, India's overall rehabilitation and reconstruction needs at \$1.2 billion, mainly in housing and fisheries, restoring livelihoods, infrastructure and agriculture.

While U.S. government aid was not requested, some private U.S. aid did go through Non-Governmental Organizations to relief work in India. By mid March the affected areas had already moved from relief to reconstruction, although many people still depended on relief.

Maldives Flooded



The tsunami moved around the low-lying islands of the Maldives, flooding them but without the terrible crashing waves that destroyed Banda Aceh.

cattered over 500 miles of the Indian Ocean southwest of India, the Maldives' low-lying islands were so tiny that the tsunami passed over them without developing the giant tidal waves that killed so many in Indonesia, Sri Lanka and Thailand.

Some 82 people died and 26 were missing but the vast majority of its 340,000 people survived as the water rose, flooding the low-lying islands, and returned to normal.

Some people jumped in their boats to ride out the tsunami, which continued on to strike Somalia, 1,400 miles to the west.

Water, electricity, and health infrastructure was severely damaged, and food assistance was needed according to the United Nations, which called for water, tents, food, blankets, emergency lights, beds, kitchen sets, communications equipment and medical kits.

Housing was being built on some of the 86 islands the government said needed reconstruction.

Eighty-seven of the Maldives' 199 inhabited islands house tourist resorts, 19 of Ocean southwest of India, the Malwhich were closed following the tsunamis.

However the Australian Foreign Minister Alexander Downer said that Australian experts found the famous coral reefs that attract tourists to the Maldives remained unscathed by the tsunami.

"With over 50 percent of Maldivian GDP derived from coral reef and island-based tourism and a further 12 percent derived from fisheries...the report is good news...indicating the tsunami had minimal impact on the country's coral reefs and bait-fish populations," Downer said.

ABOVE: The tsunami damaged the capital Male and other low-lying Maldives isles.

BELOW: Aerial view of coral reefs which sustained little damage as the tsunami passed over them.

U.S. Government Aid to the Maldives

Aid totaling \$1.4 million as of April I, 2005 included:

- Health, nutrition, water and sanitation
- 3 airlifts with relief supplies
- Water containers for 24,000 people
- Hygiene kits for 10,000 people
- Plastic shelters for 750 people

Somalia Hit



The tsunami traveled for hours before it hit the distant African coastline in Somalia, taking its final toll of life and property.

ore than 3,000 miles away from the epicenter of the earthquake, the tsunami reached Somalia eight hours later, where it killed 82 people and destroyed houses and businesses affecting 54,000 people according to CARE, which was one of several aid groups sending help to survivors.

Because it was so far from the earthquake, the tsunami was only 4 meters (12 feet) high—not as intense as other countries—but it hit a country that has been without effective government for more than a decade. Some sources say that isolated regions of the arid Somalia coast, where cholera and diarrhea kill many, could see improved access to services and water: because of the tsunami, new boreholes and deeper, safer wells are now being dug in the mountains; new latrines are being dug; and new schools and clinics are opening.

The semi-autonomous region of Puntland was hardest hit.

U.S. Government Aid to Somalia

Aid totaling \$1 million as of April 1, 2005 included:

included:

• Health assistance:

\$300,000

- Construction of shelters: \$200,000
- Emergency relief activities: \$393,000

ABOVE: The World Food Program delivers corn from USAID to the Somali town of Foar in Puntland where some 240 of the village's 1,000 inhabitants died when the tsunami hit.

Psychological Trauma

Psychiatrists train Muslim clerics, teachers and nurses to recognize survivors' trauma and to treat depressed or suicidal children and adults.

ome of the children cry out in the night in terror. They are panicked when they hear a toilet flush or the thumping of a helicopter flying over Banda Aceh. It reminds them of the sound of the tsunami, reaching from the sea to kill their families and friends, destroy their homes and sweep them away.

Women have come to the city's hospital with hysteria. Some people cannot sleep. When the wind blows they race out of their tents in fear of another tsunami.

Some children refuse to speak. Others cry all the time. Or wet their beds.

Some children have become aggressive or try to injure or kill themselves.

"Some people say they hear the voices of people crying out 'save me, save me," said a child psychiatrist, Dr. Indrati Suraputra, in a camp for hundreds of families near a television tower.

She'd come from Jakarta to train 40 teachers, community leaders and Muslim imams to look for psychological problems and "detect grave disorders like depression."

"We tell them how to listen properly and



HEALING THEATER: A Sri Lankan entertainer helps ethnic Tamil and Singhalese children, who survived the tsunami, work together and cope with their grief and fears.



ISLAMIC PSYCHOLOGY: Imam Tengku Asmidin (right) discusses how to help traumatized children with Dr. Indrati

give advice properly," said the psychiatrist. "If they detect illness they cannot cope with, such as depression and psychosis, they must refer them to community health centers. After that a doctor may refer them to a mental health hospital in Banda Aceh."

Dr. Suraputra works with groups funded by USAID—the World Health Organization and the International Organization for Migration—which are working to cope with the psychological trauma of the tsunami.

Îmam Tengku Asmidin, 26, was holding a fuzzy toy animal as he stood next to Dr. Suraputra in the camp and told of the training course he had just finished.

"Now I learn to understand people better and not just give advice on religion but on psychological fields," he said.

Because the imam is one of the refugees—his wife and children survived but he lost uncles, aunts, nephews and nieces—people in the camps come to him with their problems and he gives them encouragement.

"According to my new knowledge, many have PTSD [post-traumatic stress disorder] and some have panic disorder—mostly women," he said. "They are turning to religion to cope. Now, with some knowledge of psychology, I'll be able to do a much better job if I have to help them."

Suraputra, Indonesian Ministry of Health child psychiatrist, at a Band Aceh camp for tsunami survivors.

Preventing Exploitation and Abuse

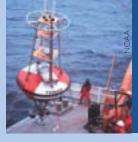
Since many children have lost one or both parents, there has been some concern about making sure that they are properly protected from anyone who might abuse them—either sending young girls to become prostitutes or sending small children to homes where they could be used as servants.

Teenaged girls and their teachers at a makeshift high school in Calang, on the west coast of Sumatra, said they had gotten invitations from residential schools in the city of Banda Aceh to send girls and boys to live and study. However the children said they did not want to go, and they said they did not know anything about these schools.

UNICEF was leading an effort by aid groups to record the number of orphans, locate any surviving relatives and ensure that all children are properly protected from any possible abuse.

Tsunami Warning System

Governments around the world worked with Indian Ocean officials to plan a warning system that might save tens of thousands in future tsunamis.



System Features

- Deep sea tsunameters detect tsunamis
- Tsunameters send signal to tethered buoy
- Buoy signals satellite
- Satellite signals tsunami center in Hawaii
- Center charts path of waves and warns target zones
- Regional authorities alert population by radio, telephone, siren and local police
- Relief agencies prepare to cope with damages

o prevent another massive loss of life, experts from Asian and other countries met in Tokyo, Phuket and Paris after the December 26 disaster to extend a tsunami warning system, now functioning in the Pacific region, to protect the Indian Ocean.

On March 9, three months after the tsunami, the U.N. Intergovernmental Oceanographic Commission (IOC) and experts from around the world agreed to set up

the system by 2006.

The \$950 million for tsunami relief President Bush said he would seek from Congress includes \$23 million to improve the international and U.S. tsunami early warning system, and \$12 million for tsunami warning and disaster mitigation in the affected

By March 27, new measures to share information on earthquakes and possible tsunamis proved effective when a powerful 8.7 magnitude earthquake hit off Sumatra, just 100 miles away from the epicenter of the giant 9.0 December 26 quake.

The Pacific Tsunami Warning Center in Hawaii informed disaster experts in Indonesia, Thailand, Sri Lanka, India and Malaysia who then spread the word through the media and the public authorities. Police, soldiers, monks, fishermen and residents of coastal areas across the Indian Ocean used megaphones, radio, telephones and temple bells to warn of the possibility of another

While early reports indicated more than 1,000 were killed on Nias Island off Sumatra by the earthquake, no tsunami hit land. However many thousands of people did move away from the sea shore to higher ground in Indonesia and nearby countriesan effective measure that could have saved tens of thousands of lives had it been done after the 2004 earthquake.

The Tsunami Warning System includes 26 countries and was created 40 years ago to protect the Pacific Rim countries after an 8.4 magnitude earthquake—biggest ever in North America—struck Alaska in 1964, setting off a tsunami that killed 119 people.

The warning system consists of a series of undersea sensors known as tsunameters placed 1,000 kilometers (625 miles) apart sist of 30 seismographs to detect earthon the ocean floor in deep water in a huge semicircle off the coasts of Pacific countries. These instruments detect the movement of tsunamis and transmit a signal to a buoy at the surface which then communicates with tsunami centers in Hawaii, Alaska and the

Seismographs give the first warning when they detect undersea quakes above magnitude 8, powerful enough to generate tsunamis. However most of these quakes do not produce tsunamis so ordering evacuations without confirmation from tsunameters is costly, wasteful and produces eventual disbelief that dangers are real.

Once instruments detect real likelihood of a tsunami, centers in Hawaii and Alaska warn local, state, national and international users as well as the media. The U.S. Nation-

quakes, 10 tidal gauges and six deep-sea detectors—costing \$20 million.

If individual countries wanted to place tsunameters closer than 1,000 kilometers apart for greater safety in earthquake-prone areas, that cost could increase.

At the IOC meeting in Paris, the following decisions were taken:

- •The United States and Japan agreed to share reports on earthquakes from their existing warning system in the Pacific with Indian Ocean countries.
- About 20 tidal gauges were to be installed or upgraded near Thailand, Indonesia and
- By the end of 2006, a regional warning center will be built, with links to a network of gauges and underwater sensors.

Education is another vital part to saving al Oceanic and Atmospheric Administration lives in future tsunamis. In schools, the me-

A series of undersea sensors known as tsunameters are placed 1,000 kilometers apart in deep water on the ocean floor, tied to buoys.

also broadcasts warnings and is exploring a dia and public meetings, all those living near system of warnings to cell phone users. On March 28 when the earthquake hit off a possible tsunami such as earthquakes or Sumatra, some residents of Banda Aceh got text messages on their cell phones warning them to evacuate coastal areas.

Since the tsunami that killed about 200,000 in Banda Aceh took only 15 minutes to hit the city after the Dec. 26 quake, a swift and effective system to spread warnings and evacuate people must be set up by every country in their coastal regions. This could involve media but also sirens.

An Australian design for an early warning system for the Indian Ocean would conthe sea must be taught the warning signs of changes in sea levels.

In Thailand, a 10-year-old English tourist, who had learned in school the previous month about tsunamis, saw the water retreating and told his parents it meant a tsunami was coming. They alerted the hotel and all guests and staff evacuated to high ground, surviving the tsunami when it hit.

The public must also learn how to evacuate crowded areas swiftly and efficiently, and how to identify the nearest practical places of refuge.



ISLAMIC MOVEMENT: Members of the Muhammadiyah moderate Islamic movement clean up a school in Banda Aceh under a U.S.-funded "cash-for-work" program.



SPINNING ROPE: Sri Lankan tsunami survivors in a U.S.-funded self-help project.

Healing and Rebuilding

Reconstruction Begins

After emergency relief comes reconstruction of towns, farms, fishing fleets, industries, schools and roads, estimated to cost \$11 billion.

s U.S. and other aid agencies distributed emergency relief, plans were being made to help reconstruct the cities, villages, farms and families torn apart by the invading sea wayes.

Rebuilding could not begin right away. Six weeks after the tsunami, one rarely heard

the banging of hammers.

In the utter ruins of downtown Banda Aceh, where hundreds of bodies still floated up to the surface after debris was removed by excavators, only one hardy family was rebuilding.

Local governments around the Indian Ocean discouraged or forbade rebuilding until they could decide where it was safe to live. Many feared to return close to the sea. Sri Lanka set a 100 meter (100 yard) setback from the sea for its southern coast and 200 meters (200 yards) for the hard-hit eastern coast. But it was not easy to identify replacement sites for the displaced. Indonesian authorities spoke of possibly a one or two kilometer safety zone which would require relocating thousands of people up to 20 or more kilometers away.

The first steps towards reconstruction were taken by thousands of people in blue or yellow T-shirts cleaning up the mud and debris under "cash-for-work" aid programs in Aceh and Sri Lanka.

The workers had lost their homes and family members, but the clean-up jobs gave them \$5 to \$7 each day—money that would revive the local economy when spent on cigarettes, sweets or school notebooks.

Micro-finance programs were planned as another early step, so people could rebuild fishing boats, fix damaged houses and reopen businesses.

The next reconstruction activity started within weeks of the tsunami. Since many local government staffers died in the tsunami, aid groups trained replacement officials. They also helped local governments repair and replace damaged offices, vehicles, computers and telephones; and they supported planning of long-range repairs to ports, roads and other infrastructure.

Next, international aid groups working under the leadership of the World Bank, of-

fered technical assistance to help move the displaced to new land, provide schools and facilities for them in new areas and be sure they had jobs in agriculture, tourism, fishing and other industries.

Financial and technical aid from the United States and other donors was being drawn up to fix schools, roads, bridges, and water treatment plants as well as small projects such as clinics, schools and markets.

Lastly, reconstruction will focus on preparing local governments to cope with a future disaster.

In addition, since in some places it appeared that mangroves, other natural barriers and sea walls reduced the destructive impact of tsunami waves, reconstruction will be environmentally-sound and develop infrastructure that is more resilient to future natural disasters.

Development experts say that the talent and resilience of people struck by disaster are the most powerful forces for reconstruction.

A plan for U.S. reconstruction aid to tsunami-affected countries, drafted even as the U.S. Congress considered the Bush Administration request for \$950 million in aid, included \$166 million to resettle more than 1 million homeless people. That includes \$40 million for housing. Already USAID funds have been used by the International Organization for Migration to build demonstration versions of housing in Indonesia—four rooms made from wood panels topped by a corrugated metal roof, all bolted to earthquake-proof cement posts.

The plan calls for about \$100 million to restart economic activity by support for fishing, tourism, food processing, agriculture and other business.

Another \$20 million would help people with food, water and short-term work as they move from camps to new homes and permanent jobs.

Reconstruction will also tackle big-ticket projects such as fixing dozens of bridges and rebuilding roads destroyed by the tsunami—principally in Indonesia and Sri Lanka.

World Bank-Asian Development Bank assessments in those two countries—augmented by U.S. Army Corps of Engineers and USAID rapid appraisals—put infrastructure reconstruction costs at \$6 billion.

Former Presidents George Bush and Bill Clinton—who were asked by the current President Bush to raise funds for tsunami relief and flew to visit the damage in the Indian Ocean countries—estimated reconstruction costs to be as high as \$11 billion.

Private U.S. donations of about \$1.2 billion, private aid from other countries and official government aid, are supporting this global task.



man salvages lumber to rebuild—first of a handful to try and re-occupy their land.

Gintota, Sri Lanka clears away rubble of a school so it can be rebuilt.

Ten Major Achievements

- Within hours of the tsunami, U.S. and other aid groups began sending food, water, plastic sheeting and medicine. Page 8
- 2 Aid agencies and militaries worked together to deliver aid and evacuate the injured. Page 8
- **Fast aid prevents epidemics** by monitoring, preventing, and treating communicable diseases. Page 8
- 4 One million people sheltered in schools, mosques, temples. Built temporary shelters for tens of thousands of people. Pages 11,17
- 5 Striken nations coordinated foreign aid, local medical teams, Red Cross societies, NGOs, and military forces. Pages 19,20

- **6 Cash-for-Work programs** cleaned up wreckage, employed tens of thousands of displaced people, jumpstarted-recovery. Page 24
- 7 **Clean water** produced on U.S. military ships, delivered by helicopters; purification kits given to thousands. Pages 8,14
- 8 Trained trauma counselors.
 Psychiatrists trained teachers, community leaders and clerics to help counsel thousands of grieving children. Page 22
- **9 Registered, protected children** U.S. aid assured safety of orphans, reopened schools. Page 22
- 10 Planning major reconstruction has begun. Some \$6 billion pledged for roads, ports, electricity, schools, and housing. Page 24

